THE BLACK LINE®

H.264 4/8/10/16-Channel High-Definition DVR
Quick Start Guide

Products: BLK-HD4D, BLK-HD4E, BLK-HD8D, BLK-HD10D, BLK-HD16D

BLK-HD4E (upper)
BLK-HD4D and BLK-HD8D (middle)
BLK-HD10D and BLK-HD16D (lower)

PLEASE READ THIS GUIDE BEFORE USING YOUR RECORDER, and always follow the instructions for safety and proper use. Save this guide for future reference.

BLK-HDxxD_RQ
10/22/14
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Specifications*

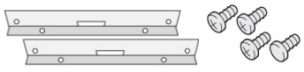
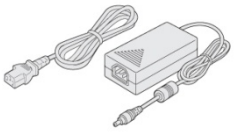
ITEM			BLK-HD4D	BLK-HD4E	BLK-HD8D	BLK-HD10D	BLK-HD16D
Recording performance			720p x 48 fps / 1080p * 20 fps		720p x 120 fps / 1080p * 40 fps	Analog: D1 realtime HD: 720p x 60 fps / 1080p x 30 fps	720p x 192 fps / 1080p x 80 fps
Video	Input	Channels	4 channel		8 channel	10 channels	16 channel
		Input level	HDcctv / HD-SDI			8 channels composite, 1.0 Vp-p, 75 Ω plus 2 channels HDcctv/HD-SDI	HDcctv / HD-SDI
	Output	VGA	1 VGA, resolutions up to 1080p,				
		HDMI	1 HDMI, resolutions up to 1080p				
		HD-SDI	--	--	--	--	1 channels
		LOOP	--	--	--	8 channels	--
		BNC	--	--	--	1 channels	--
		Spot	--	--	--	4 channels	--
Audio	Input / Output		4 channel line input 1 channel line output			10 channel line input 1 channel line output	16 channel line input 1 channel line output
	Audio CODEC		G.711 (ADPCM)				
Alarm	Sensor Input (NC/NO selectable)		4 channels		8 channels	10 channels	16 channels
	Alarm Output		1 alarm out		2 alarm out	4 alarm out	4 alarm out
Record	Compression		H.264				
	Multi-Operation		QUADPLEX (Playback/Record/Network/Backup)				
	Analog Resolution		--			D1, half-D1 and CIF 240 fps	--
	HD Resolution	1280 x 720	48 fps	48 fps	96 fps	60 fps	192 fps
		1920 x 1080	20 fps	20 fps	40 fps	30 fps	60 fps
	Recording Quality Grade		5 grades				
	Recording Mode		Continuous / Schedule / Motion/ Sensor/ Manual				
	Motion Detection		Motion detection setup by grid				
	Recording by Channel Resolution		Yes				
	Pre Recording		Minimum 15 seconds, maximum 20 minutes				
	Post Recording		Minimum 10 seconds, maximum 60 seconds				
Display	Frame Rate (/Sec)		Realtime				
Playback	Multi-Decoding		1, 4		1, 4, 8	1. 4	1, 4, 8, 16
	Playback speed		x1/4 ~ x32		x1/4 ~ x16	x1/4 ~ x32	x1/4 ~ x8
	Search Mode		Timeline, Event, Archive, Log				
Storage	HDD	Interface Type	Serial ATA I				
		Capacity of 1 HDD	4TB (maximum)				
		Internal HDD No.	1 (2 in DVRs without DVD-RW)	2	1 (2 in DVRs without DVD-RW)	2 (4 in DVRs without DVD-RW)	2 (4 in DVRs without DVD-RW)
	eSATA		1				

ITEM			BLK-HD4D	BLK-HD4E	BLK-HD8D	BLK-HD10D	BLK-HD16D
	USB Port		2 (front 1, rear 1)				
	Backup	USB Flash drive	Video and still image				
		USB external HDD	Video and still image				
		Network	Video and still image				
User I/F	Menu Display		GUI				
	Input Method		Front panel buttons, remote control, mouse, keyboard				
Serial port	Console (RS-232C)		--				
	PTZ control		1 RS-485	1 RS-485	1 RS-485	2 RS-485	2 RS-485
	Termination		1	1	1	2	2
Network	Dynamic DNS		Yes (free DDNS)				
	Network Interface		10/100/1000BASE-T Ethernet (RJ-45)				
	Network Streaming		640 x 360 x 120 fps 320 x 180 x 120 fps		640 x 360 x 240 fps 320 x 180 x 240 fps	1280 x 720 x 120 fps 640 x 360 x 120 fps	1280 x 720 x 240 fps 640 x 360 x 240 fps
Network Access	Web Viewer (1:1)		Live, Search, Backup, PTZF, Remote Setup, Remote Upgrade, Two Way Audio				
	3G Mobile Viewer (1:1)		Live, Search, PTZF, Two Way Audio				
	Multi-sites monitoring software (1:n)		Live, Search, Backup, PTZF, Remote Setup, Remote Upgrade, Two Way Audio				
Features	DLS (Day Light Saving)		Yes				
	Internal Beep		By Alarm, Motion, Video Loss, HDD error				
	Firmware Upgrade		USB flash drive, remote network				
	NTP		Yes				
Power	Power Supply Voltage		12 Vdc, 5 A			100~120 Vac / 200~240 Vac, 50/60 Hz, 280 W	
Allowable Operating Temperature			41 °F - 104 °F (5 °C ~ 40 °C)				
Allowable Operating Humidity			0 - 90 % RH				
Weight / Gross weight			9 lb (4.1 kg) / 13.6 lb (6.2 kg)	3.5 lb (1.6 kg) / 8.1 lb (3.7 kg)	9 lb (4.1 kg) / 13.6 lb (6.2 kg)	15.0 lb(6.80 kg) / 19.8 lb (8.98 kg)	
Weight / Gross weight			9 lb (4.1 kg) / 13.6 lb (6.2 kg)			15.0 lb(6.80 kg) / 19.8 lb (8.98 kg)	
Dimension (*w* x *h* x *d*)			14.96″ x 2.83″ x 13.38 ″ (380 mm x 71.9 mm x 340 mm)	13.25″ x 2.5″ x 10.″ (337 mm x 63.5 mm x 254 mm)	14.96″ x 2.83″ x 13.38″ (380 mm x 71.9 mm x 340 mm)	17.00″ x 3.86″ x 16.92″ (431.8 mm x 98.0 mm x 429.8 mm)	

*Specifications and exterior design are subject to change without notice.

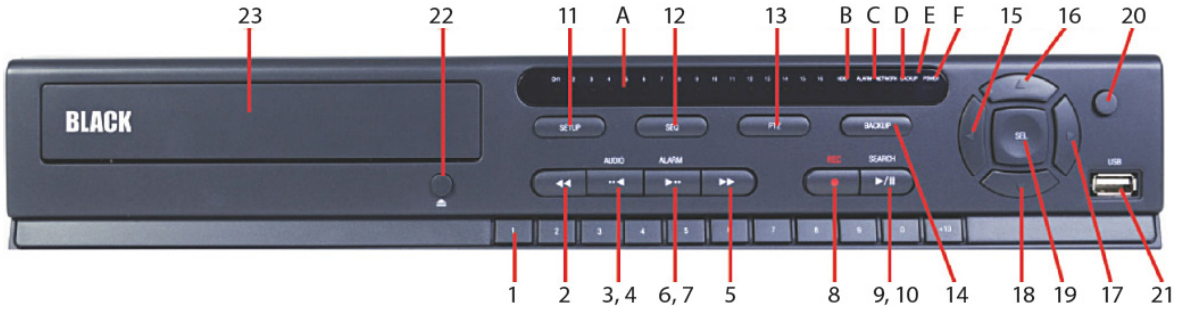
Product Components

The package contains the DVR unit and the components shown below.

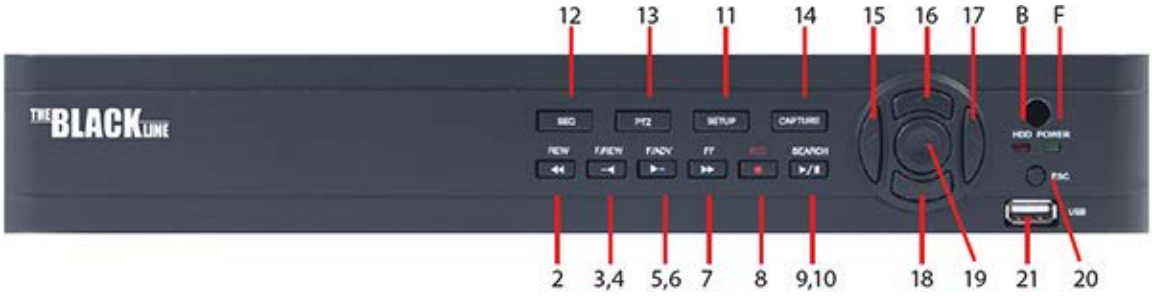
DVR Unit	 BLK-HD4D, BLK-HD8D BLK-HD4E BLK-HD10D, BLK-HD16D
Client Software CD	
Remote Control	
Battery1.5V (AAA x 2EA)	
Quick Guide **(User Guide as PDF on Client Software CD)**	
Data Power Cable	
Mounting Bracket & Screws	
HDD Mounting Screws	
Power Adaptor (DC12V 5A) & **Power Cable (110V or 220V)**	
Mouse	

Front panel indicators and controls

BLK-HD4D, BLK-HD8D



BLK-HD4E



Front Panel LEDs

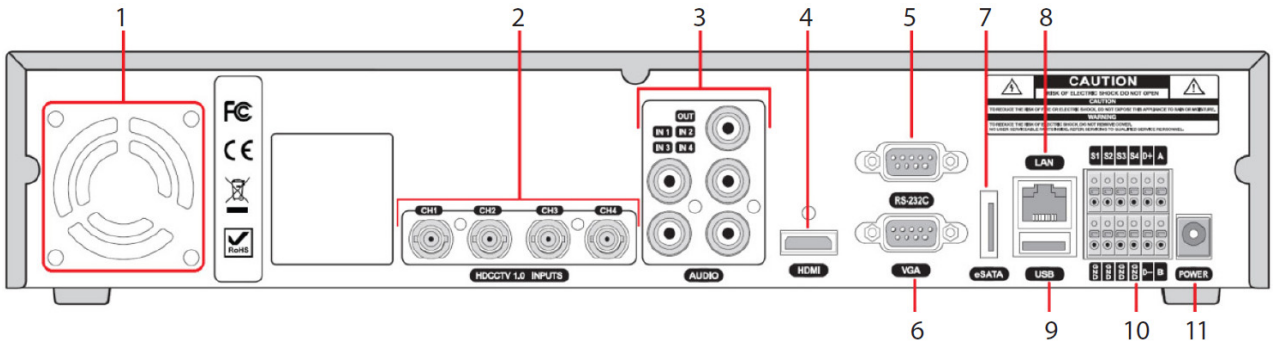
No.	Name	Description
A	CH1~4, 8	Indicates that the channel is being recorded.
B	HDD	Indicates that the system is accessing the hard disk.
C	ALARM	Indicates that sensor(s) is/are triggered or motion is detected.
D	NETWORK	Indicates that a network client is connected
E	BACKUP	Indicates that a USB or DVD-RW device contains stored data
F	POWER	Indicating that the system is switched on.

Front Panel Buttons

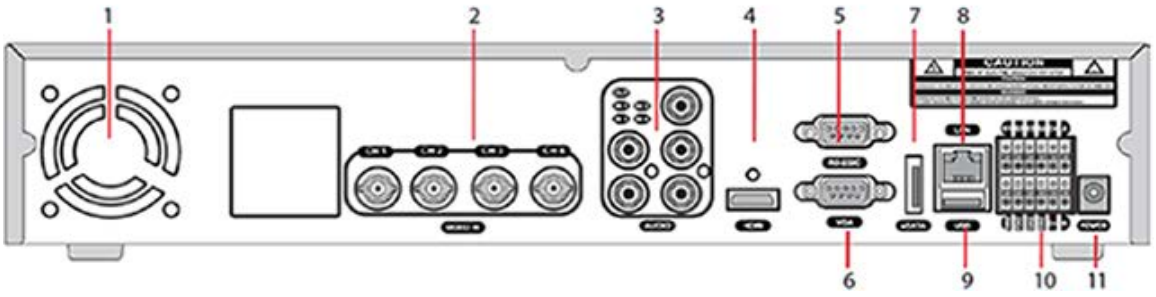
No.	Name	Description
1		Channel keys. For channel 10, press the 0 key. For channel 11, press the +10 then the 1 keys. For channel 16, press the +10 then the 6 keys.
2		In playback mode, press to rewind the recording. Press again to increase the rewind speed.
3		Press to select an audio mode: MUTE – Mute all 4 channels. SINGLE - Highlighted channel only. MIX - Mix all 4 channels.
4		Jump/step backward. In playback mode, the playback position moves 60 seconds backward.
5		In playback mode, press to fast forward the recording. Press again to increase the fast forward speed.
6		Press to enable/disable ALARM operation.

No.	Name	Description
7	ALARM ▶••	Jump/step forward. In playback mode, the playback position moves 60 seconds forward.
8	REC ●	Press to start or stop manual recording.
9	SEARCH ▶/II	In live display mode, press to open the SEARCH menu.
10	SEARCH ▶/II	In playback mode, press to play/pause the footage.
11	SETUP	Press to open the SETUP menu.
12	SEQ	Enable/disable the automatic sequence of display of channels in full screen, quad, 9-split display mode.
13	PTZ	Press to control Pan/Tilt/Zoom operations.
14	BACK UP	Press to capture video in jpeg format in live or playback mode.
15	◀ (LEFT)	Press to move left or to change the values in Setup mode. It is also used as the number 4 when entering password.
16	▲ (UP)	Press to move up the menu in Setup mode. It is also used as the number 1 when entering password.
17	▶ (RIGHT)	Press to move right or to change the values in Setup mode. It is also used as the number 2 when entering password.
18	▼ (DOWN)	Press to move down the menu in Setup mode. It is also used as the number 3 when entering password.
19	SEL	Press to select desired menu item or to store the setup value.
20	ESC	Press for temporary storage of the changed value or to return to the previous menu screen.
21	**USB port**	To save a snapshot image or video clip on a USB flash drive, or upgrade firmware with a USB flash drive, first connect the USB flash drive to the USB port.
22	**OPEN/CLOSE**	Press to open or close the disk tray.
23	**DVD drive**	To save video, insert a CD-R/DVD-R

BLK-HD4D back panel connectors



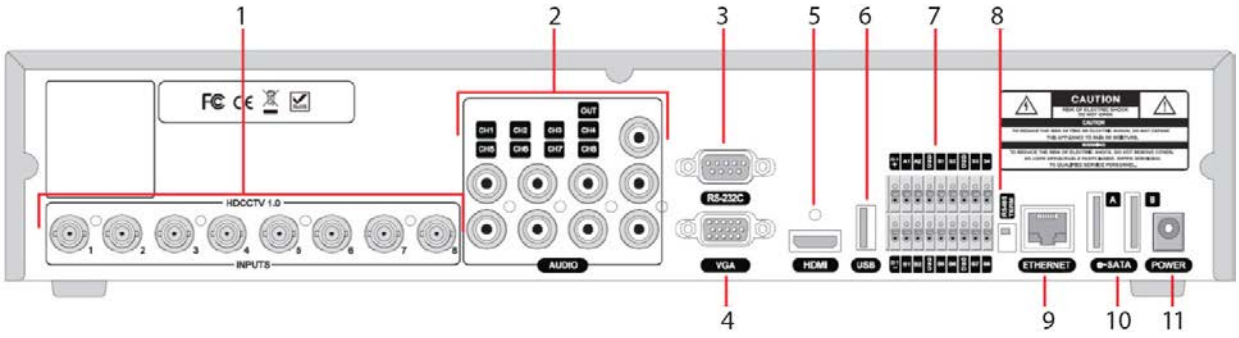
BLK-HD4E back panel connectors



Back panel connectors

No.	Name	Description
1	**Fan**	Airflow outlet
2	**HDCCTV / 1.0 INPUTS**	HD-SDI video inputs
3	**AUDIO IN / AUDIO OUT**	4 RCA connectors for audio input 1 RCA connector for audio output
4	**HDMI**	HDMI video out.
5	**RS-232 interface**	Used for testing only.
6	**VGA**	Connector for a VGA monitor.
7	**eSATA port**	Connector for external storage
8	**ETHERNET**	RJ-45 connector for LAN connection.
9	**USB**	Use with a USB flash drive to archive still images and videos, and upgrade firmware, or use to connect a USB mouse to the DVR
10	**RS-485, sensor and alarm terminations**	RS-485 PTZ camera control terminals. Refer to the User Manual for more information.
11	**POWER SOCKET**	Connect DC12V 5A power adaptor

BLK-HD8D back panel



BLK-HD8D back panel connectors

No.	Name	Description
1	**HDCCTV 1.0 1 - 8 Inputs**	HD-SDI input
2	**AUDIO IN / AUDIO OUT**	8 RCA connectors for audio input, 1 RCA connector for audio output
3	**RS-232 interface**	Used for testing only.

No.	Name	Description
4	**VGA**	Connector for a VGA monitor
5	**HDMI**	HDMI video out
6	**USB**	Use with a USB flash drive to archive still images and videos, and upgrade firmware, or use to connect a USB mouse to the DVR.
7	**Sensor / alarm terminations**	See description below.
8	**RS-485**	RS-485 PTZ camera control terminal
9	**ETHERNET**	RJ-45 connector for LAN connection
10	**eSATA port**	Connector for external storage
11	**POWER SOCKET**	Connect DC12V 5A power adaptor

BLK-HD10D, BLK-HD16D

Front panel indicators and controls

Front Panel LEDs

No.	Name	Description
A	**HDD**	Indicates that the system is accessing the hard disk.
B	**RECORD**	Indicates that the system is recording video.
C	**ALARM**	Indicates when a sensor is triggered or motion is detected.
D	**NETWORK**	Indicates that a network client is connected.
E	**BACKUP**	Indicates that a USB or DVD-R/W storage device is storing images or video.

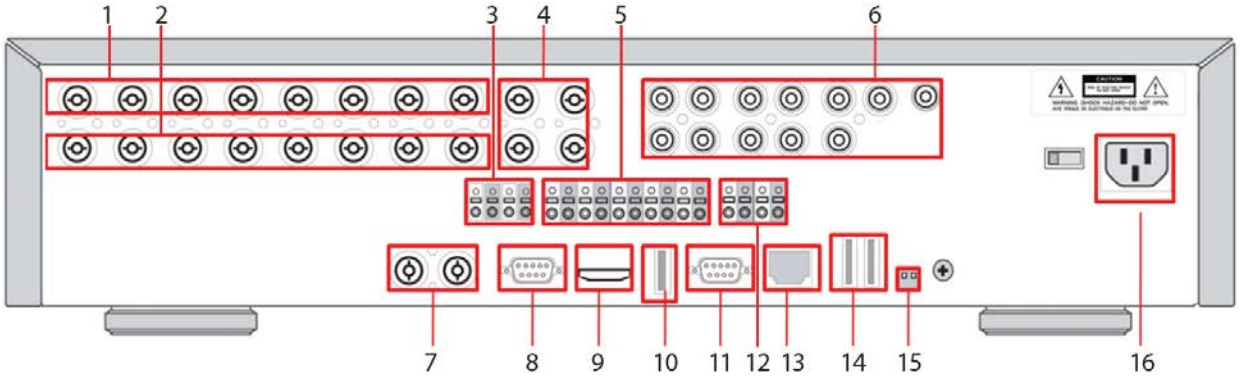
Front Panel Buttons

Front Panel Buttons

No.	Name	Description
1	**POWER**	Power ON/OFF
2	**NUMBER**	Channel select keys. For channel "10", press the "0" key. For channel "11", press the "+10" key and the "1" key. For channel "16", press the "+10" key and the "6" key.
3	**SEQ**	Enable/disable the automatic display of channels in full screen, quad, and 9-split screen mode.
4	**PTZ**	Press to control pan/tilt/zoom operations.
5	**SETUP**	Press to open the SETUP menu.

No.	Name	Description
6	**BACKUP**	Press to capture video in jpeg format during display during live or playback mode.
7	**REW**	Press to rewind in playback mode.
8	**F/REV**	Jump/step backwards. In playback mode, the jump moves 60 seconds back.
9	**F/ADV**	Jump/step forwards. In playback mode, the jump moves 60 seconds forward.
10	**FF**	Press to fast forward in playback mode.
11	**REC**	Press to start or stop manual recording.
12	**SEARCH** **PLAY/PAUSE**	During LIVE display mode, press to open the SEARCH menu. During PLAYBACK mode, press to play or pause.
13	**▲ (UP)**	Press to move up the menu in SETUP mode. When entering a password, it inserts a 1.
14	**▶ (RIGHT)**	Press to move right or to change the values in SETUP mode. When entering a password, it inserts a 2.
15	**▼ (DOWN)**	Press to move down the menu in Setup mode. When entering a password, it inserts a 3.
16	**◀ (LEFT)**	Press to move left or to change the values in Setup mode. When entering a password, it inserts a 4.
17	**SEL**	Press to select the highlighted menu item or store the setup value.
18	**ESC**	Press for temporary storage of the changed value or to return to the previous menu screen.
19	**USB Port**	Use with a USB flash drive to archive still images and videos and upgrade firmware, or use to connect a USB mouse to the DVR.

BLK-HD10D back panel

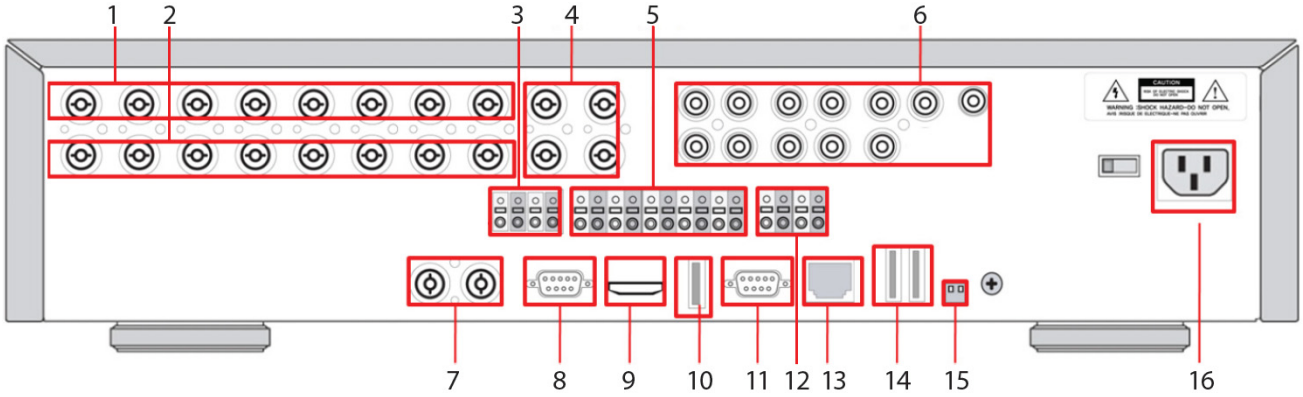


BLK-HD16D back panel connectors

No.	Name	Description
1	**VIDEO IN**	8 BNC connectors for composite video input (NTSC/PAL) Channels 1 - 8
2	**LOOP**	8 BNC connectors for video output (loop back)
3	**RS-485**	1st and 2nd ports for RS-485 network (camera and controller)
4	**SPOT**	4 composite video outputs for spot monitoring
5	**SENSOR IN**	8 terminations for sensor device connection
6	**AUDIO IN /** **AUDIO OUT**	8 connectors for audio input (channels 1 - 10) 1 connector for audio output
7	**VIDEO IN**	2 HD-SDI connectors for video input (channels 9. 10)
8	**VGA**	Connector for a VGA monitor
9	**HDMI OUT**	Main video out (1280 x 720p)

No.	Name	Description
10	**USB**	Use with a mouse or for backup
11	**RS-232**	Not used at this time
12	**ALARM OUT**	2 terminations for alarm device connection. Provides simple on/off switching with a relay (0.5 A / 125 Vac, 1 A / 30 Vac)
13	**ETHERNET**	RJ-45 connector for LAN connection
14	**eSATA port**	2 eSATA ports for archive of still images or video to an external HDD. Connector for external storage
15	**RS-485**	RS-485 A and B network termination switches ON/OFF
16	**POWER SOCKET**	Connect 110 ~ 250 Vac power

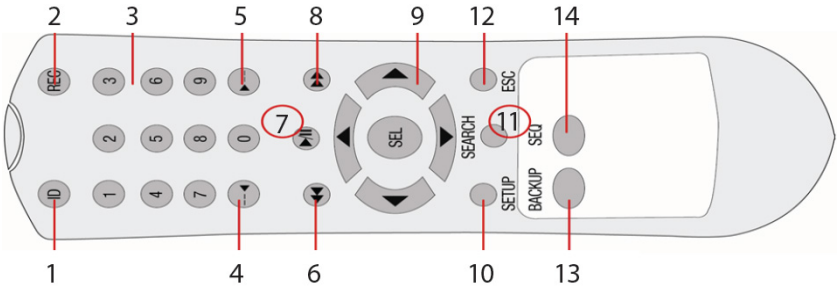
BLK-HD16D back panel



BLK-HD16D back panel connectors

No.	Name	Description
1	**VIDEO IN**	HDCCTV 1.0 video input. Channels 1 - 8, 9 - 16.
2	**AUDIO IN** **AUDIO OUT**	Audio input. Channels 1 - 4, 5 - 16 1 channel audio out
3	**SENSOR IN**	Sensor in terminations
4	**VIDEO OUT**	HDCCTV 1.0 video output
5	**RS-232C**	For testing only
6	**VGA**	Connector for a VGA monitor
7	**HDMI**	HDMI video out
8	**USB**	
9	**RS-485**	RS-485 termination for PTZ camera control
10	**ETHERNET**	RJ-45 connector for LAN connection
11	**eSATA port**	Connector for external storage
12	**RS-485**	RS-485 A and B network termination switches ON/OFF
13	**POWER SOCKET**	Connect 110 ~ 250 Vac power

Remote Control



No.	Name	Description
1	**ID**	When a remote control ID number is set in the DVR, input the DVR ID number.
2	**REC**	To start and stop manual recording
3	**Number**	To select channel (1, 2, .. 16) or to enter DVR ID number.
4	**F/REW**	During playback - To move the playback position 60 seconds backward. During pause - To move the playback position 1 frame backward.
5	**F/ADV**	During playback - To move the playback position 60 seconds forward. During pause - To move the playback position 1 frame forward.
6	**REW**	To rewind the recording. Press again to increase the rewind speed.
7	**PLAY/PAUSE**	To play or to pause the footage in playback mode.
8	**FF**	To fast forward the recording. Press again to increase the fast forward speed.
9	**Control button**	Press to move the menu items or select channel.
10	**SETUP**	To open the SETUP menu.
11	**SEARCH**	To open the search menu.
12	**ESC**	During setting - To return to previous menu screen. During playback - To exit from playback System Lock – To lock a system when pressing ESC button for 5 seconds. System Unlock – To unlock a system when pressing ESC button for 5 seconds.
13	**BACKUP**	To start operations of backup in live or playback mode. (The same function button as CAPTURE on the front panel of DVR)
14	**SEQ**	To start auto sequencing of the screen in full screen mode. (Toggle)

System Installation and Setup

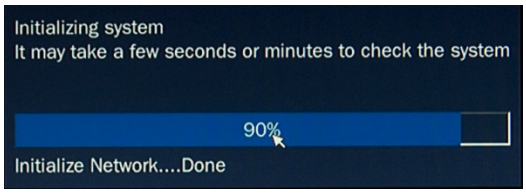
Follow the steps below to install and setup your system. For more information, refer to the user manual provided on the CD.

1. Plan your entire installation carefully, considering:
   - Position of the cameras to effectively cover your surveillance targets. Avoid locations and orientations where bright light might shine on or reflect onto the camera lens.
   - Security of the camera and the cabling to the DVR. Is it easy for an intruder to disable the cameras?
   - Location of the DVR. Is it in a secure location? Is the temperature and humidity within specifications?

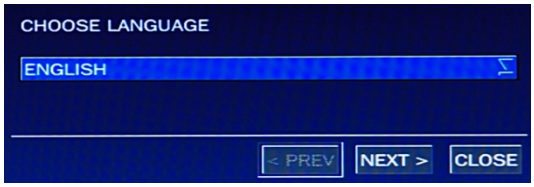
2. Install your cameras in accordance with the manufacturer's instructions.
3. Connect the video/audio and power extension cables to the cameras, then route them to the location of the DVR. Note that video extension cables connectors are usually different at each end; the end with the male power connector attaches to the camera drop cable, the end with the female power connector attaches to the power source and DVR.
4. Place the DVR on a clean, flat surface. Do not apply power to the DVR at this time.
   - Plug the USB mouse to the USB port on the DVR.
   - Connect a monitor to the VGA connector on the back of the DVR.
5. Connect the video extension cable from each camera to a video port on the back of your DVR.

- If the camera location has a microphone, also attach the audio cable to an audio input connector on the back of the DVR.

6. Attach the power extension cable to the cameras to the recommended power source to power them on.
7. Power on the DVR.
   - Connect the power adapter to the DC12V power connector on the back of the DVR.
   - Power on the monitor.
   - Connect the power cable to the power adapter and to a standard 120 VAC outlet. When the DVR is powering on, an initialization window will appear.

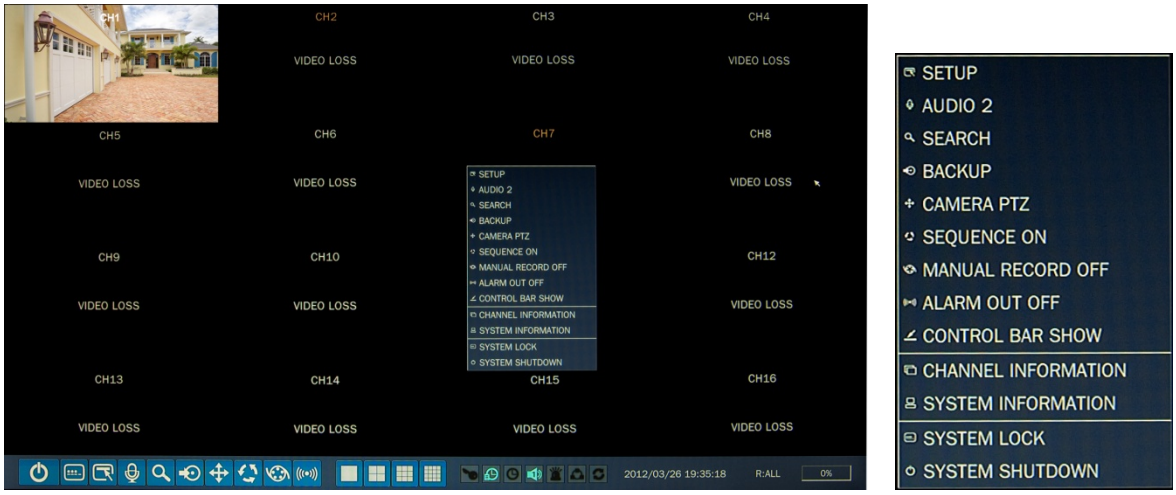


8. When the CHOOSE LANGUAGE window opens, use the mouse to open the dropdown list, select the language you prefer to use, then click Next. NOTE: You can also change the language setting later through the SETUP menus.

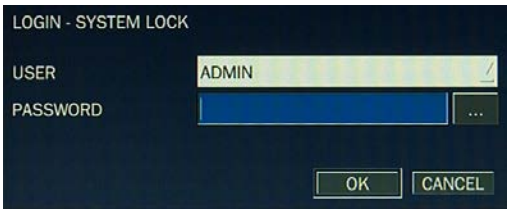


9. In the DAYLIGHT SAVING window, use the mouse to open the dropdown menus and select the DLS region, date and time. When the correct date and time is shown, click Next. NOTE: The date and time setup in the DVR is used to timestamp recorded video recordings. It is very important that this be set correctly if video recordings are used as evidence.

10. When the main screen opens, you should see a video image from each camera. Use this image to refine the manual settings of the camera. These settings include the camera direction, and may include focus, zoom, and other settings.
11. Right click the mouse anywhere on the DVR screen then click SETUP, or press the SETUP button on the front panel to access the SETUP menu.



If a LOGIN window opens, click the virtual keyboard button (at the right of the password entry field) to open the keyboard window. Use the keyboard to click in the default **ADMIN** password, "**1111**", then click **OK**. In the LOGIN window, click **OK** again to open the DVR **SETUP** menus.

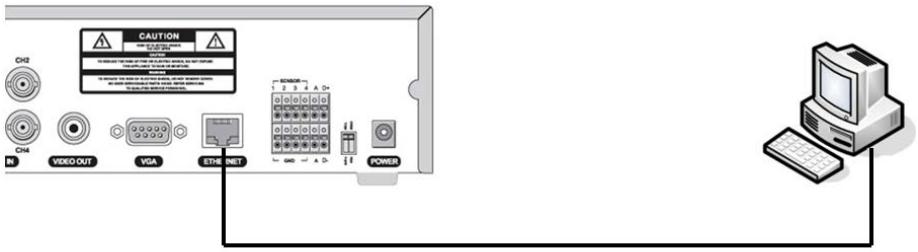


12. Configure the SETUP menus to customize the DVR settings for your system. Refer to the user manual included on the CD for more information about DVR Setup and system configuration settings.

Network Connections

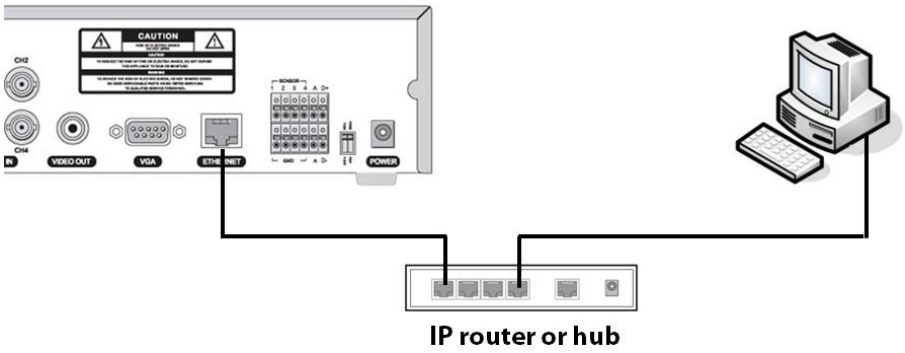
LAN Connection – Using a crossover cable without a switching hub

Connect to the system directly using a crossover type network cable.



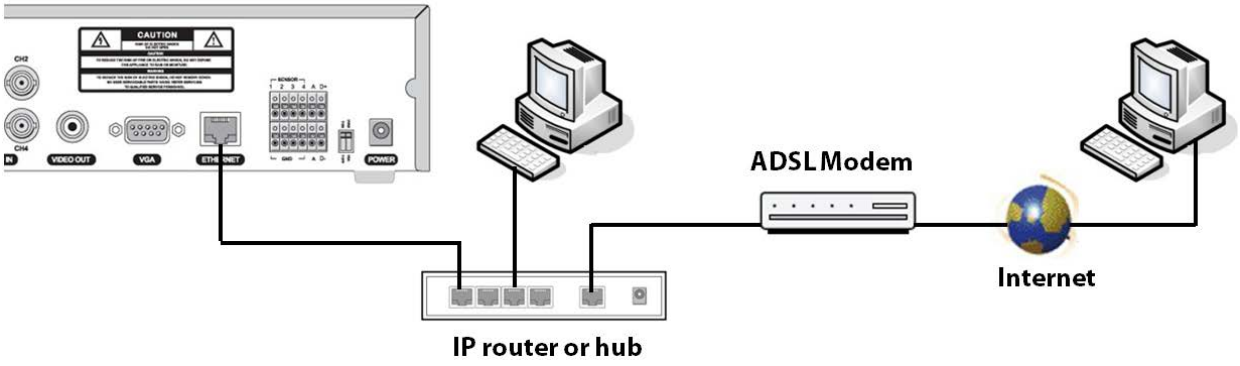
LAN Connection – Using a switching hub

Connect to the system using a hub (switching hub) and an Ethernet cable (10BASE-T/100BASE-TX CAT 5 LAN cable).



Internet (ADSL) Connection

Connect to the system using a router or ADSL modem and an Ethernet cable (10BASE-T/100BASE-TX CAT 5 LAN cable).



Smartphone Access

When your DVR is configured for access across the Internet, you can remotely monitor and control you video security using the free smartphone app Blackhawk. This app features:

- View from 1 to 16 cameras
- View images in portrait or landscape (single channel)
- Monitor multiple locations
- 3G/Wi-Fi compatible
- Playback Search

For more information, and to download and install the app, go to:

- **Apple® iPhone®, iPod touch®,** or **iPad®:** http://itunes.apple.com/app/blackhawk-for-iphone/id422091119?
- **Android™ phones**: http://www.androidzoom.com/android_applications/tools/blackhawk_tlcv.html